

## Proposed Regulation Order

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those sections with proposed changes are included. Sections 2400, 2401, 2402, 2404, 2405.1, 2405.2, 2405.3, and 2407 remain unchanged.

Amend Article 1, Chapter 9, Division 3, Title 13, California Code of Regulations, to read as follows:

### Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

#### Article 1. Small Off-Road Engines

##### § 2403. Exhaust Emission Standards and Test Procedures – Small Off-Road Engines.

(a) [No Change]

(b) (1) [No Change]

(2) Low-emitting Blue Sky Series engine requirements.

*Voluntary standards.* Engines may be designated “Blue Sky Series” engines by meeting:

(A) All applicable requirement of this Article, and

(B) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road equipment may certify to the Blue Sky Series emission standards. Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the 2005 and Later Test Procedures to certify their equipment for sale in California.

(3) In lieu of meeting the requirements of (2)(B) above, manufacturers of zero-emission small off-road equipment may obtain emission credits as detailed in section 2408.

Voluntary Emission Standards  
(grams per kilowatt-hour)

<i>Model Year</i>	<i>Displacement Category</i>	<i>Hydrocarbon plus Oxides of Nitrogen</i>	<i>Carbon Monoxide</i>	<i>Particulate*</i>
2005 and subsequent	<50 cc	25	536	2.0
	50 - 80 cc, inclusive	36	536	2.0
2007 and subsequent	>80 cc - <225 cc	5.0	549	
2008 and subsequent	≥225 cc	4.0	549	

\* Applicable to all two-stroke engines

(43) Evaporative emission requirements for small off-road engines are specified in Title 13, Chapter 15, Article 1.

(c) [No change.]

(d) [No change.]

(e) Averaging. For new 2000 and subsequent model year small off-road engines, a manufacturer may comply with the standards established in paragraph (b), above, by choosing either to certify an engine family to the standards or to use the corporate average described below.

(1) For each model year, the corporate average value for a pollutant is defined by the following equation:

$$\frac{\sum_{j=1}^n (\text{FEL}_j)(\text{Sales}_j)(\text{Power}_j)(\text{Load Factor})(\text{EDP}_j) - \text{credits expended}}{\sum_{j=1}^n (\text{Sales}_j)(\text{Power}_j)(\text{Load Factor})(\text{EDP}_j)} = \text{AVG}$$

where

- n = the number of small off-road engine families.
- FEL = the Family emission level for an engine family.
- Sales<sub>j</sub> = eligible sales of engine family *j*.
- Power<sub>j</sub> = sales-weighted maximum modal power, in horsepower or kilowatt as applicable, of engine family *j*, or an alternative approved by the Executive Officer.
- EDP<sub>j</sub> = Emissions durability period of engine family *j*, in hours.
- AVG = For a given pollutant (HC+NO<sub>x</sub>, CO, or Particulate Matter), a manufacturer's corporate average of the exhaust emissions from those California small off-road engines subject to the California corporate average pollutant exhaust emission standard, as established by an Executive Order certifying the California production for the model year. Engines certified to

voluntary standards of 2403 (b)(2) are not eligible for corporate averaging.

Credits expended = HC+NO<sub>x</sub> or Particulate Matter credits, as defined in sections 2408 and 2409, that are expended by the manufacturer to adjust the corporate average. This term has no meaning for any pollutants other than HC+NO<sub>x</sub> and Particulate Matter.

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the Load Factor formula found in paragraph (f)(1) of section 2408.

(2) [No Change]

(3) [No Change]

(f) to (h) [No Change]

(i) Executive Officer Discretion for Technical Changes.

The Executive Officer may revise or incorporate specific technical requirements with respect to the test procedures incorporated at § 2403(d) of these regulations. For the purposes of this subparagraph (i), "technical requirements" includes revisions to test procedures, test methodology, or any requirement to enhance alignment with similar federal regulations promulgated after the amendments to this Article 1, as noticed October 3, 2008, are adopted. Such technical requirements shall be electronically noticed to listserv subscribers, shall be made available to the public via appropriate ARB webpage postings, and shall be noticed in the California Regulatory Notice Register. Such technical requirements will become effective 30 days after notice, unless any person notifies the Executive Officer in writing that they object to any part of the technical requirements noticed.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2405. Defects Warranty Requirements for 1995 and Later Small Off-Road Engines.**

(a) Applicability. [No Change]

(b) General Emissions Warranty Coverage. The manufacturer of each small off-road engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a minimum period of two years.

(c) to (g) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2406. Emission Control System Warranty Statement.**

(a) [No Change]

(b) Warranty Contact Requirement

(1) Commencing with the 1995 calendar year, each manufacturer must furnish with each new engine a warranty statement that generally describes the obligations and rights of the manufacturer and owner under this article. Manufacturers must also include in the warranty statement a phone number the consumer may use to obtain their nearest franchised United States service center.

(2) The service center phone number must be staffed with at least one English speaking contact. The contact must be a live person or be required to respond to messages within one business day.

(c) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2408. Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions.**

(a) Applicability. [No Change]

(b) General provisions.

(1) [No Change]

(2) An engine family may use the averaging, banking and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> and Particulate Matter emissions if it is subject to regulation under this article with certain exceptions specified in paragraph (3) of this section. ~~HC+NO<sub>x</sub> and Particulate Matter credits are interchangeable subject to the limitations on credit generation, credit usage, cross-class averaging and other provisions described in this section.~~

(3) to (7) [No Change]

(c) Averaging. [No Change]

(d) Banking.

(1) to (3) [No Change]

(4) Commencing with the 2009 model year, any previously banked certification emission credits and any new certification emission credits earned can be used for up to five years. In the sixth year, any unused certification credits will expire. (For example, if a 2009 model year engine family earns emission credits, those emission credits may be used or banked until the 2014 model year. Any remaining banked credits earned with the 2009 model year, will be invalid for use in the 2015 and subsequent model years.)

(e) Trading. [No Change]

(f) Credit calculation and manufacturer compliance with emission standards.

(1) For each engine family, HC+NO<sub>x</sub> and Particulate Matter certification emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

$$\text{Credits} = (\text{Standard} - \text{FEL}) \times \text{Sales} \times \text{Power} \times \text{EDP} \times \text{Load Factor}$$

Where:

Standard = the current and applicable small off-road engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or Particulate Matter emission standard as determined in Section 2403.

FEL = the family emission limit for the engine family in grams per brake-horsepower hour or g/kW-hr as applicable.

Sales = eligible sales as defined in section 2401. Annual sales projections are used to project credit availability for initial certification. Actual sales volume is used in determining actual credits for end-of-year compliance determination.

Power = the sales weighted maximum modal power, in horsepower or kilowatts as applicable. This is determined by multiplying the maximum modal power of each configuration within the family by its eligible sales, summing across all configurations and dividing by the eligible sales of the entire family.

Manufacturers may use an alternative if approved by the Executive Officer (for example, maximum modal power of the test engine).

EDP = the Emissions Durability Period for which the engine family was certified in hours.

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the following formula:

$$\sum_{i=1}^n (\%MTT \text{ mode}_i) \times (\%MTS \text{ mode}_i) \times (WF \text{ mode}_i)$$

Where:

%MTT mode<sub>i</sub> = percent of the maximum torque for mode i

%MTS mode<sub>i</sub> = percent of the maximum engine rotational speed for mode i

WF mode<sub>i</sub> = the weighting factor for mode i

(2) [No Change]

(3) If, as a result of production line testing as required in section 2407, an engine family is determined to be in noncompliance, the manufacturer may ~~raise its~~ recertify to a higher FEL for past and future production as necessary. Further, a manufacturer may carry a negative credit balance (known also as a credit deficit) for the subject class and model year forward to the next model year. The credit deficit may be no larger than that created by the nonconforming family. If the credit deficit still exists after the model year following the model year in which the nonconformity occurred, the manufacturer must obtain and apply credits to offset the remaining credit deficit at a rate of 1.2 grams for each gram of deficit within the next second model year after the model year of the initial deficit. The provisions of this paragraph are subject to the limitations in paragraph (4) of this section.

(4) Regulations elsewhere in this section notwithstanding, if an engine manufacturer experiences two or more production line testing failures pursuant to the regulations in section 2407 of this article in a given model year, the manufacturer may ~~raise the FEL of~~ recertify previously produced engines to a higher FEL only to the extent that such engines represent no more than 10% of the manufacturer's total eligible sales for that model year. For any additional engines determined to be in noncompliance, the manufacturer must conduct offsetting projects approved in advance by the Executive Officer.

(5) If, as a result of production line testing under section 2407, a manufacturer desires to lower its FEL, it may do so subject to Executive Officer approval and demonstration that the family would meet the new FEL in the production line testing using the existing data. A manufacturer may lower their FEL at most once per model year.

(6) Except as allowed at paragraph (c) of this section, when a manufacturer is not in compliance with the applicable emission standard by the date 270 days after the end of the model year, considering all credit calculations and transactions completed by then, the manufacturer will be in violation of these regulations and the Executive Officer may, void *ab initio* the Executive Orders of engine families for which the manufacturer has not obtained sufficient positive emission credits.

(7) Credits for Zero-emission small off-road equipment or Zero Emission Equipment (ZEE)

(A) A manufacturer can earn zero emission equipment credits for zero emission small off-road equipment provided it meets all of the following requirements:

(1) The equipment must be able to perform at a level equivalent to that of professional equipment (e.g., power, cutting width, etc.).

(2) The equipment to be considered for emission credits must not be powered through an electrical cord.

(3) Each recharge or refueling should allow the equipment to perform at a professional performance level for at least four hours.

(4) The time to re-power (i.e., replace the battery pack) the zero emission small off-road equipment should be equivalent to the time of refueling typical spark-ignition equipment.

(5) The equipment must meet the maximum durability period requirement for its equivalent displacement category.

(6) The equipment must be able to perform the small off-road engine test cycle repeatedly for the full durability period.

(7) The equipment must be certified as required in California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines adopted July 26, 2004, as last amended [INSERT DATE].

(B) For each equipment type, HC+NO<sub>x</sub> and Particulate Matter certification emission credits are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

$$\underline{ZEE \text{ Credits} = \text{Standard} \times \text{Sales} \times \text{Power} \times \text{EDP} \times \text{Load Factor}}$$

Where the definitions of each variable is the same as in subsection (f)(1) in this section.

(g) Certification Using Credits.

(1) In the application for certification a manufacturer must:

(A) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to be in noncompliance under paragraph (f)(2) when all credits are calculated for all the manufacturer's engine families.

(B) Declare an FEL for each engine family for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and Particulate Matter, if applicable. The FEL must have the same number of significant digits as the emission standard.

(C) Indicate the projected number of credits generated/needed for this family; the projected applicable eligible sales volume and the values required to calculate credits as given in paragraph (f).

(D) Submit calculations in accordance with paragraph (f) of projected emission credits (positive or negative) based on production projections for each family.

(E) 1. If the engine family is projected to generate negative emission credits, state specifically the source (manufacturer/engine family or reserved) and quantity of the credits necessary to offset the credit deficit according to projected production. Zero emission equipment credits can be used to compensate for negative certification emission credits, up to forty percent above the standard. If an engine family has emissions higher than forty percent above the standards, certification emission credits can be used to account for the remaining emission deficit.

2. If the engine family is projected to generate credits, state specifically the recipient (manufacturer/engine family or reserved) and quantity of the credits used to offset a deficit, banked, or traded, according to where the projected credits will be applied.

(2) The manufacturer may supply the information required above in subparagraphs (C), (D), and (E) by use of a spreadsheet detailing the manufacturer's annual production plans and the credits generated or consumed by each engine family.

(3) All Executive Orders issued are conditional upon manufacturer compliance with the provisions of this section both during and after the model year of production.

(4) Failure to comply with all provisions of this section will be considered to be a failure to satisfy the conditions upon which the Executive Order was issued, and the Executive Order may be determined to be void *ab initio*.

(5) The manufacturer bears the burden of establishing to the satisfaction of the Executive Officer that the conditions upon which the Executive Order was issued were satisfied or waived.

(6) Projected credits based on information supplied in the certification application may be used to obtain an Executive Order. However, any such credits may be revoked based on review of end-of-year reports, follow-up audits, and any other verification steps considered appropriate by the Executive Officer.

(h) Maintenance of records. [No Change]

(i) End of year and final reports. [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2409. Emission Reduction Credits – Production Credit Program for New Engines.**

(a) Applicability. The 1998 to 2009 model year ~~and later~~ small off-road engines subject to the provisions of this article are eligible to participate in the production emission credit program described in this section for HC +NO<sub>x</sub> (or NMHC+NO<sub>x</sub>, as applicable) and Particulate Matter emissions. Previously banked production emission credits may continue to be used until exhausted through calendar year 2010 but production credits generated after model year 2009 will not be accepted into the production credit program.

(b) General provisions.

(1) The production credit program for eligible small off-road engines is described in this section. Participation in this program is voluntary.

(2) Any 2000 to 2009 model year ~~or later~~ engine family subject to the provisions of this article is eligible to participate in the production credit program described in this section. Any 1998 or 1999 model year engine family subject to the provisions of this article is eligible to participate in the production emissions credit program described in this section provided it conforms ~~with~~ to the requirements of section 2403.

(3) Credits generated and used in the certification averaging, banking, and trading program pursuant to the provisions of section 2408 may not be used in the production credit program.

(4) An engine family with a compliance level, as determined by production line testing pursuant to section 2407, below the applicable FEL to which the engine family is certified may generate emission credits for averaging, banking, or trading in the production credit program.

(5) Positive credits generated in a given model year may be used in that model year and/or in any subsequent model year. Positive credit generation may continue through the 2009 model year.

(6) All production credits will retain full value through year 2010. In model year 2011, all production emission credit balances will expire.

(c) Averaging. [No Change]

(d) Banking.

(1) A manufacturer of an engine family with a production compliance level below the FEL to which the engine family is certified for a given model year may bank positive production credits for that model year for use in certification

averaging, trading, or, at the Executive Officer's discretion, to remedy noncompliance of another engine family.

(2) Unless otherwise approved by the Executive Officer, a manufacturer that generates positive production credits must wait 30 days after it has both completed production testing for the model year for which the credits were generated and submitted the report required by paragraph (g)(1) before it may bank credits for use in future averaging or trading. During the 30 day period, the Executive Officer will work with the manufacturer to correct any error in calculating banked credits, if necessary.

(3) As mentioned in paragraph (b)(6) of this section, production credits banked pursuant to this section will expire as of the 2011 model year and will no longer be available for use in averaging or trading.

(e) to (h) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.